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9 OCCUPATIONAL SURVEY REPORT.
ELECTRONIC PRINCIPLES

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AFSC 34152

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OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Defensive Systems Trainer Specialist, AFSC 34152.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Capt John X. Olivo. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
DEFENSIVE SYSTEMS TRAINER SPECIALIST
AFSC 34152

INTRODUCTION

→ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Defensive Systems Trainer Specialists (AFSC 34152). The data for this report were collected during the period April through June 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands. ↑

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 34152 airmen worldwide. Responses from 48 individuals represented 78 percent of the total of all AFSC 34152 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	O845	30
44	PULSE MODULATION SYSTEMS	O875	31
45	ANTENNAS	O914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	34152	
	PERCENT ASSIGNED	PERCENT OF SAMPLE
SAC	89	83
ATC	<u>11</u>	<u>17</u>
TOTAL	100	100

Total Assigned - 62
Total Sampled - 48
Percent Sampled - 78%

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the four selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Power Supplies (p. 19) to low in areas such as Saturable Reactors and Magnetic Amplifiers (p. 29). Additional AFSC 34152 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MURS RESPONDING 'YES' BY SELECTED GRPS

GPSUNZ PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 341X2 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC026	ALL AIRMEN DAFSC 34152	CONTAINING	78 MEMBERS.
GROUP IDENTITY =	SPC027	ALL AIRMEN DAFSC 34152 STATIONED IN COMUS	CONTAINING	46 MEMBERS.
GROUP IDENTITY =	SPC029	ALL AIRMEN DAFSC 34152 ASSIGNED TO ATC	CONTAINING	6 MEMBERS.
GROUP IDENTITY =	SPC030	ALL AMN DAFSC 34152 ASSIGNED TO SAC	CONTAINING	40 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK		SPC		SPC		SPC		MATHMATICS
				Q26		Q27		Q29		
A	1	AI-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.		92	92	100	90			
A	2	AI-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.		60	60	63	60			
A	3	AI-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.		52	52	50	52			
A	4	AI-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.		13	13	0	15			
A	5	AI-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.		40	40	38	40			
A	6	AI-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.		6	6	0	10			
A	7	AI-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.		6	6	0	10			
A	8	AI-08 DO YOU SOLVE QUADRATIC EQUATIONS.		13	13	13	13			
A	9	AI-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.		6	6	0	7			
A	10	AI-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.		29	29	25	30			
A	11	AI-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.		19	19	0	22			
A	12	AI-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.		4	4	13	2			
A	13	AI-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.		8	8	0	10			
A	14	AI-14 DO YOU SOLVE OR USE PROPORTIONS.		25	25	0	30			
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).		98	98	100	97			DIRECT CURRENT AND VOLTAGE
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).		50	50	38	52			
A	17	A2-03 DO YOU USE THE TERM OHM.		98	98	100	97			
A	18	A2-04 DO YOU USE THE TERM ION.		21	21	13	22			
A	19	A2-05 DO YOU USE THE TERM DYNE.		21	21	25	20			
A	20	A2-06 DO YOU USE THE TERM AMPERE.		96	96	88	97			
A	21	A2-07 DO YOU USE THE TERM NEUTRON.		19	19	0	22			
A	22	A2-08 DO YOU USE THE TERM COULOMB.		27	27	13	30			
A	23	A2-09 DO YOU USE THE TERM PROTON.		19	19	0	22			
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.		85	85	63	90			RESISTANCE
A	25	A3-02 DO YOU INSPECT RESISTORS.		96	96	86	97			
A	26	A3-03 DO YOU CLEAN RESISTORS.		63	63	75	85			
A	27	A3-04 DO YOU ADJUST RESISTORS.		94	94	88	95			
A	28	A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.		96	96	86	97			
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.		96	96	88	97			
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.		35	35	38	35			
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.		96	96	100	97			
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.		96	96	100	97			
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.		96	96	100	97			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC	SPC	SPC	SPC	SPC
	026	027	029	030	
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	98	98	100	97	
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	21	21	0	25	
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	33	33	50	30	
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	98	98	100	97	
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	65	65	50	47	
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	65	65	50	67	
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	69	69	50	72	
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	56	56	36	60	
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	67	67	63	67	
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	67	67	63	67	
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	69	69	63	70	
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	65	65	50	67	
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	54	54	25	60	
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	67	67	63	67	
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	67	67	63	67	
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	69	69	63	70	
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	60	60	50	63	
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	52	52	13	60	
B 52 B1-01 DO YOU MEASURE RESISTANCE.	98	98	100	97	
B 53 B1-02 DO YOU REPAIR OHMMETERS.	0	6	13	5	
B 54 B1-03 DO YOU MEASURE VOLTAGE.	96	96	86	97	
B 55 B1-04 DO YOU REPAIR VOLTMETERS.	6	6	0	7	
B 56 B1-05 DO YOU REPAIR AMMETERS.	6	6	0	7	
B 57 B1-06 DO YOU MEASURE CURRENT.	88	88	86	88	
B 58 B1-07 DO YOU USE MULTIMETERS.	96	96	88	97	
B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	17	17	13	17	
B 60 B1-09 DO YOU READ SCHEMATICS.	98	98	100	97	

MULTIMETER USES

PCT MMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 4

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

BY-TSK

		SPC	SPC	SPC	SPC	
		026	027	029	030	
B 61	02-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE	73	73	63	75	ALTERNATING CURRENT
B 62	02-02 DO YOU USE OR REFER TO THE TERM PEAK TO PLAK VOLTAGE.	92	92	75	95	
B 63	02-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	74	79	63	82	
B 64	02-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	60	60	50	63	
B 65	02-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	90	90	88	90	
B 66	02-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	23	23	0	27	INDUCTORS AND INDUCTIVE REACTANCE
B 67	02-07 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING	67	67	50	70	
B 68	INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.					
B 69	03-02 DO YOU INSPECT INDUCTORS.	60	60	50	63	
B 70	03-03 DO YOU CLEAN INDUCTORS.	52	52	25	57	
B 71	03-04 DO YOU ADJUST INDUCTORS.	52	52	38	55	
B 72	03-05 DO YOU REMOVE OR REPLACE INDUCTORS.	63	63	50	65	
B 73	03-06 DO YOU USE OR REFER TO INDUCTANCE.	44	44	25	47	
B 74	03-07 DO YOU USE OR REFER TO MEMILS.	42	42	25	45	
B 75	03-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	42	42	25	45	
B 76	03-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	10	10	0	13	
B 77	03-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	15	15	0	17	
B 78	03-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	17	17	0	20	
B 79	03-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT	15	15	25	13	
B 80	INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF					
B 81	URNS OF THE COIL.					
B 82	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE IN-	15	15	45	13	
B 83	DUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS					
B 84	SECTIONAL AREA OF THE CORE.					
B 85	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE	15	15	45	13	
B 86	INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS					
B 87	LENGTH.					
B 88	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE	17	17	25	15	
B 89	INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE					
B 90	PERMEABILITY OF THE CORE MATERIAL.					
B 91	03-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS	17	17	0	20	
B 92	USING FORMULAS.					
B 93	03-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE	27	27	13	30	
B 94	IN SERIES.					
B 95	03-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS	27	27	13	30	
B 96	IN PARALLEL.					
B 97	03-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS	25	25	13	27	
B 98	IN SERIES-PARALLEL CIRCUITS.					
B 99	03-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT	27	27	13	30	
B 100	LAYS VOLTAGE IN AC INDUCTOR CIRCUITS.					
B 101	03-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	23	23	13	25	
B 102	03-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT	21	21	13	22	
B 103	INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.					
B 104	03-23 DO YOU WORK WITH POWER INDUCTORS.	33	33	0	40	
B 105	03-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	44	44	13	50	
B 106	03-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	46	46	50	45	

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUMZ PAGE 5

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 046	SPC 027	SPC 029	SPC 030	CAPACITORS AND CAPACITIVE REACTANCE
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	92	92	100	90	
C 93 C1-02 DO YOU INSPECT CAPACITORS.	90	96	100	95	
C 94 C1-03 DO YOU CLEAN CAPACITORS.	79	79	75	80	
C 95 C1-04 DO YOU ADJUST CAPACITORS.	88	88	88	88	
C 96 C1-05 DO YOU TEST CAPACITORS.	94	94	100	92	
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	88	88	100	85	
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	98	98	100	97	
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	27	27	25	27	
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	4	2	0	2	
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	90	90	75	92	
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	88	86	63	92	
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	27	27	13	30	
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	81	61	63	85	
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	52	52	13	60	
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	58	58	38	63	
C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	98	98	100	97	
C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	94	94	100	92	
C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	85	85	63	90	
C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	13	13	38	7	
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	19	19	13	20	
C 112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	15	15	0	17	
C 113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	15	15	13	15	
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	35	35	13	40	
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	38	38	13	42	
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	38	38	13	42	
C 117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	33	33	13	36	
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	40	40	25	42	
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	31	31	25	32	
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	27	27	13	30	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

QY-75K

QTY-TSK	SPC	SPC	SPC	SPC	SPC	SPC
	Q26	Q27	Q28	Q29	Q30	Q31
C 121 C1-00 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	75	75	75	75	75	75
C 122 C1-31 DO YOU WORK WITH COMPRESSION (THINNER) CAPACITORS	52	52	45	57	55	57
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	96	96	100	95	95	95
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	92	92	88	92	88	92
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	68	68	88	68	88	68
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	90	90	88	90	88	90
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	8	8	0	0	0	0
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	90	90	100	100	88	88
C 129 C2-02 DO YOU INSPECT TRANSFORMERS	94	94	100	92	92	92
C 130 C2-03 DO YOU CLEAN TRANSFORMERS	73	73	75	72	73	75
C 131 C2-04 DO YOU ADJUST TRANSFORMERS	73	73	63	75	73	75
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	83	83	75	85	83	85
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	94	94	100	92	94	100
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	19	19	13	20	19	13
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	8	8	0	10	0	10
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	10	10	0	13	10	13
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	19	19	0	22	19	0
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	19	19	0	22	19	0
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	10	10	0	13	10	0
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	10	10	0	13	10	0
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	27	27	13	30	27	13
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS	83	83	75	85	83	75
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	65	65	63	65	65	63
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	65	65	88	60	65	88
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	13	13	0	15	13	0
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	85	85	75	88	85	75
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	81	81	75	82	81	75
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	75	75	63	77	75	63
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	44	44	38	45	44	38
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	67	67	63	67	67	63
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	88	88	75	90	88	75

ACT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 7

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC	SPC	SPC	SPC
	026	027	029	030
C 154 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	69	69	75	67
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	61	61	75	62
C 159 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	61	61	75	82
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	52	52	38	55
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	54	54	38	57
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	60	60	50	63
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	46	46	13	55
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	33	33	0	40
C 160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO	27	27	0	32
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	52	52	25	57
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	23	23	0	27
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	17	17	0	20
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	54	54	50	55
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	38	38	25	40
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	27	27	25	27
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	25	25	13	27
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	40	40	25	42
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	42	42	25	45
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	6	6	0	10
C 171 C2-44 DO YOU USE OR REFER TO PERMANENT MAGNETS	35	35	13	40
C 172 C2-45 DO YOU USE OR REFER TO TEMPORARY MAGNETS	33	33	0	40
C 173 C2-46 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	19	19	0	22
C 174 C2-47 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	13	13	0	15
C 175 C2-48 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	15	15	0	17
C 176 C2-49 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	21	21	0	25
C 177 C2-50 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FIELD	43	43	0	27
C 178 C2-51 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	6	6	0	10

MAGNETISM

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUMZ PAGE 2

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DT-15A

	SPC	SPC	SPC	SPC
	026	027	027	030
C 179 C3-C9 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	4	8	0	10
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	23	23	13	25
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY	17	17	0	20
C 182 C3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR	42	42	38	42
MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT				
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE	27	27	25	27
DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES				
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH	27	27	25	27
POLE OF A CURRENT CARRYING COIL				
D 185 D1-D1 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR	58	58	13	67
PRESENT JOB				
D 186 D1-C2 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL	21	21	0	25
CIRCUITS				
D 187 D1-U3 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN	19	19	0	22
WORKING WITH RCL CIRCUITS				
D 188 D1-D4 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL	15	15	0	17
CIRCUITS				
D 189 D1-D5 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL	13	13	0	15
CIRCUITS				
D 190 D1-D6 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL	10	10	0	13
CIRCUITS				
D 191 D1-D7 DO YOU USE OR REFER TO WATS WHEN WORKING WITH RCL	48	48	13	55
CIRCUITS				
D 192 D1-C8 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING	23	23	0	27
WITH RCL CIRCUITS				
D 193 D1-D9 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN	19	19	0	22
WORKING WITH RCL CIRCUITS				
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN	19	19	0	22
WORKING WITH RCL CIRCUITS				
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN	19	19	0	22
WORKING WITH RCL CIRCUITS				
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING	19	19	0	22
WITH RCL CIRCUITS				
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN	35	35	0	42
WORKING WITH RCL CIRCUITS				
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH	56	56	0	67
RCL CIRCUITS				
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH	29	29	0	35
RCL CIRCUITS				
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN	35	35	0	42
WORKING WITH RCL CIRCUITS				
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN	21	21	0	25
WORKING WITH RCL CIRCUITS				
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING	23	23	0	27
WITH RCL CIRCUITS				
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH	21	21	0	25
RCL CIRCUITS				

RCL CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 9

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC
026 027 029 030

UT-TSK

0 204 01-20 DO YOU USE OR REFER TO TALK CIRCUITS WHEN WORKING WITH RCL CIRCUITS 50 50 13 57

0 205 01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS 15 15 0 17

0 206 01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS 15 15 13 15

0 207 01-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS 21 21 13 22

0 208 01-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS 15 15 13 15

0 209 01-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS 19 19 0 22

0 210 01-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS 4 4 0 5

0 211 01-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS 15 15 0 17

0 212 01-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS 17 17 0 20

0 213 01-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS 15 15 0 17

0 214 01-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS 19 19 0 22

0 215 01-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS 4 4 0 5

0 216 01-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD 6 6 0 7

0 217 01-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW 21 21 0 25

0 218 01-34 DO YOU CHECK CAPACITORS USING OHMMETERS 73 73 50 77

0 219 01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION 60 60 50 63

0 220 01-36 DO YOU CHECK INDUCTORS USING OHMMETERS 54 54 38 57

0 221 01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION 42 42 25 45

0 222 01-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT TANGENT θ , $\text{PF} = 1$, AND $\text{PA} = \text{PT}$ FOR RESONANT CIRCUITS 15 15 0 17

0 223 01-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS 17 17 0 20

0 224 01-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS 15 15 0 17

0 225 01-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS 10 10 0 13

0 226 01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE 23 23 13 25

0 227 01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q 13 13 13 13

0 228 01-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS 21 21 0 25

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

		SPC SPC SPC SPC		SPC SPC	
		026 027 027 027		026 027 027 027	
D 459 D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT		25 25 13 21			
D 460 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS		17 17 13 17			
E 261 E1-31 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB		77 77 50 82			
E 262 E1-32 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH NC COUPLING		71 71 38 77			
E 263 E1-33 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING		58 58 38 63			
E 264 E1-34 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING		67 67 13 77			
E 265 E1-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING		71 71 38 77			
E 266 E1-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING		56 56 38 60			
E 267 E1-37 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING		69 69 38 75			
E 268 E1-38 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS		71 71 38 77			
E 269 E1-39 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS		65 65 25 72			
E 270 E1-40 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS		54 54 25 60			
E 271 E1-41 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS		67 67 38 72			
E 272 E1-42 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS		15 15 13 15			
E 273 E2-1 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS		96 96 100 95			
E 274 E2-2 DO YOU SELECT TYPE OF SOLDER TO USE		81 81 75 82			
E 275 E2-3 DO YOU ADD FLUX TO CONNECTIONS		88 88 75 90			
E 276 E2-4 DO YOU CLEAN CONNECTIONS USING SOLVENTS		81 81 63 85			
E 277 E2-5 DO YOU STRIP INSULATION FROM WIRES		96 96 100 97			
E 278 E2-6 DO YOU CONNECT OR DISCONNECT HEAT SINKS		98 98 100 97			
E 279 E2-7 DO YOU BEND OR SHAPE WIRES OR LEADS		98 98 100 92			
E 280 E2-8 DO YOU CUT WIRES		96 96 88 97			
E 281 E2-9 DO YOU FILE OR SHAPE SOLDERING IRON TIPS		79 79 75 80			
E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS		94 94 88 95			
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS		98 98 100 97			
E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS		90 90 75 92			
E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTIONS		96 96 88 97			
E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS		98 98 100 97			
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING		79 79 100 75			
E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TONGS		88 88 75 90			
E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS		81 81 100 77			
E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL		44 44 50 42			

SOLDERING

COUPLING

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TASK

SPC SPC SPC SPC
026 027 028 030

E 291 E2-19 DO YOU MAKE HANDWIRE CONNECTIONS
E 292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
E 293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS
E 294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS

E 295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB

E 296 E3-02 DO YOU ADJUST RELAYS

E 297 E3-03 DO YOU CLEAN RELAYS

E 298 E3-04 DO YOU INSPECT RELAYS

E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS

E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS

E 301 E3-07 DO YOU TROUBLESHOOT RELAYS

E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS

E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS

E 304 E3-10 DO YOU PERFORM TASKS ON RELAY COILS

E 305 E3-11 DO YOU PERFORM TASKS ON RELAY ARMATURES

E 306 E3-12 DO YOU PERFORM TASKS ON RELAY SPRINGS

E 307 E3-13 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW

E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW

E 309 E3-15 DO YOU USE OR REFER TO DOUBLE POLE, SINGLE THROW

E 310 E3-16 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW

E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW

E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC

E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE

E 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES

F 315 F1-02 DO YOU INSPECT MICROPHONES

F 316 F1-03 DO YOU CLEAN MICROPHONES

F 317 F1-04 DO YOU OPERATE MICROPHONES

F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES

F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS

F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES

F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS

F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES

F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES

F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES

F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES

F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES

RELAYS

MICROPHONES

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK						
F 327 F2-01	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	65	65	75	63	SPEAKERS
F 328 F2-02	DO YOU INSPECT SPEAKERS	60	60	75	57	
F 329 F2-03	DO YOU CLEAN SPEAKERS	58	58	75	55	
F 330 F2-04	DO YOU OPERATE SPEAKERS	63	63	75	60	
F 331 F2-05	DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	54	54	25	60	
F 332 F2-06	DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	29	29	63	22	
F 333 F2-07	DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	63	63	75	60	
F 334 F2-08	DO YOU REMOVE OR REPLACE SPEAKER PARTS	19	19	63	10	
F 335 F2-09	DO YOU PERFORM ANY TASKS ON SPEAKER CONES	10	10	13	10	
F 336 F2-10	DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	0	0	0	0	
F 337 F2-11	DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	6	6	13	5	
F 338 F2-12	DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	8	8	0	10	
F 339 F2-13	DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	8	8	0	10	
F 340 F2-14	DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	10	10	13	10	
F 341 F2-15	DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	4	4	0	5	
F 342 F3-01	DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	96	96	100	95	
F 343 F3-02	DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	96	96	100	95	
F 344 F3-03	DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	96	96	100	95	
F 345 F3-04	DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	94	94	88	95	OSCILLOSCOPES
F 346 F3-05	DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	96	96	100	95	
F 347 F3-06	DO YOU USE OSCILLOSCOPES TO MEASURE TIME	94	94	88	95	
F 348 F3-07	DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	54	54	38	57	
F 349 F3-08	DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	96	96	100	95	
F 350 F3-09	DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	67	67	63	67	
F 351 F3-10	DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	96	96	100	95	
F 352 F3-11	DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	83	83	75	85	
F 353 F3-12	DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	96	96	100	95	
G 354 G1-01	DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	98	98	100	97	
G 355 G1-02	DO YOU INSPECT DIODES	98	98	100	97	
G 356 G1-03	DO YOU REMOVE OR REPLACE DIODES	98	98	100	97	SEMICONDUCTOR DIODES
G 357 G1-04	DO YOU CHECK DIODES USING AN INSTRUMENT	98	98	100	97	
G 358 G1-05	DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	15	15	0	17	
G 359 G1-06	DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE	23	23	13	25	
G 360 G1-07	DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	36	36	25	40	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC
026	027	029	030
79	79	75	80
90	90	88	90
25	25	0	30
71	71	36	77
67	67	13	77
10	10	0	13
8	8	0	10
88	88	75	90
10	10	0	13
18	10	0	13
67	67	50	70
13	13	0	15
15	15	0	17
15	15	0	17
90	90	100	88
42	42	38	42
48	48	25	52
27	27	0	32
69	69	63	70
23	23	0	27

G 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES
 G 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE
 G 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING OR CURRENT FLOW
 G 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE
 G 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING
 G 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
 G 367 G1-14 DO YOU USE OR REFER TO CENTRIPITAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
 G 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538
 G 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT
 G 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT
 G 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE
 G 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT
 G 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON
 G 374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON
 G 375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)
 G 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)
 G 377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END
 G 378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON
 G 379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)
 G 380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT
 G 381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS
 G 382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS

PCT MRS RESPONDING +YES+ BY SELECTED GRPS

GPSUM2 PAGE 15

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

UY-TSK

UY-TSK	SPC 026	SPC 027	SPC 029	SPC 030
U 383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	17	17	0	20
U 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	19	19	0	22
U 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	19	19	0	22
U 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	19	19	0	22
U 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	27	27	0	32
U 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	21	21	0	25
U 389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	23	23	0	27
U 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	44	44	50	42
U 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	44	44	50	42
U 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	27	27	0	32
U 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	27	27	0	32
U 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	21	21	0	25
U 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	25	25	13	27
U 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	27	27	0	32
U 397 G1-44 DO YOU USE OR REFER TO THE 10:1 RATIO BACK TO FRONT RESISTANCE RATIO FOR DIODES	54	54	50	55
U 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	17	17	0	20
U 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	83	83	75	85
U 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	48	48	13	55
U 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	44	44	13	50
U 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	45	46	13	52
U 403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	52	52	13	60
U 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	96	96	100	95
U 405 G2-02 DO YOU INSPECT TRANSISTORS	98	98	100	97
U 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	98	98	100	97
U 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	98	98	100	97
U 408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	96	96	100	95
U 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	96	96	100	95

TRANSISTORS

JC

PCT MHS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 14

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC	SPC	SPC	SPC	SPC
026	027	029	030	
94	94	88	95	
40	40	13	45	
40	40	13	45	
73	73	63	75	
46	46	25	50	
98	98	100	97	
98	98	100	97	
90	90	75	92	
54	54	25	60	
67	67	25	75	
38	38	13	42	
25	25	13	27	
25	25	0	30	
25	25	0	30	
23	23	0	27	
13	13	0	15	
13	13	0	15	
13	13	0	15	
85	85	88	85	
77	77	63	80	
75	75	50	80	
81	81	88	80	
81	81	88	80	
73	73	63	75	
83	83	88	82	
44	44	25	47	
23	23	0	27	

TRANSISTOR
AMPLIFIERS

G 410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC)
RESISTANCE MEASUREMENTS
G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE
PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION
G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE
PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION
G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE
TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)
G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A
TRANSISTOR
G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS
G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS
Q1, Q2, Q3, ETC
G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION
INFORMATION
G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE
TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY
SMALLER THAN THE EMITTER CURRENT IE (USUALLY IS BEING 2 TO
8 PERCENT OF IE)
G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER
BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR
TRANSISTORS
G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT
(ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES
G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC
CURVES
G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS
G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS
G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS
G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS
G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS
G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS
G 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR
PRESENT JOB
G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS
G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS
G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMP-LIFIER CIRCUIT LEVEL
G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS
G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER
G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS
G 435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN
COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE
CURRENT
G 436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE
CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN
COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN
BASE CURRENT

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 17

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

01-TSK

	SPC	SPC	SPC	SPC
	026	027	028	030
Q 437 Q3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	46	46	25	50
Q 438 Q3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	27	27	13	30
Q 439 Q3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	46	46	25	50
Q 440 Q3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	29	29	25	30
Q 441 Q3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	19	15	0	17
Q 442 Q3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	19	19	13	20
Q 443 Q3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	13	13	13	13
Q 444 Q3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	58	58	25	65
Q 445 Q3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	48	48	25	52
Q 446 Q3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	42	42	25	45
Q 447 Q3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS? DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	17	17	0	20
Q 448 Q3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS? DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	17	17	0	20
Q 449 Q3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS? DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	19	19	13	20
Q 450 Q3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT Q) OF THE TRANSISTOR	21	21	13	22
Q 451 Q3-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	10	10	0	13
Q 452 Q3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	48	48	0	57
Q 453 Q3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	46	48	13	55

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC
	026	027	029	030	
454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	40	40	13	45	
455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	48	46	13	55	
456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	48	48	13	55	
457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	38	38	13	42	
458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	54	54	0	65	
459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	54	54	13	63	
460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	44	44	13	50	
461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	56	56	13	65	
462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	54	54	13	63	
463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	40	40	13	45	
464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	63	63	13	72	
465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	67	67	25	75	
466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	56	56	13	65	
467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	50	50	13	57	
468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	46	46	13	52	
469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	52	52	13	60	
470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	33	33	13	38	
471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	42	42	13	47	
472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	35	35	13	40	
473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	60	60	13	70	
474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY AMPLIFIERS	36	36	0	45	
475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	38	38	0	45	

UT-TSK

PCT MGRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

LT-TSK

SPC SPC SPC SPC
026 027 029 030

6 476 53-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED

40 40 13 45

AMPLIFIERS

M 477 41-01 DO YOU USE OR REFER TO VARACTORS

35 35 13 40

M 478 41-02 DO YOU USE OR REFER TO TUNNEL DIODES

38 38 13 42

M 479 41-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)

56 56 25 63

M 480 41-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS

58 58 13 67

M 481 41-05 DO YOU USE OR REFER TO ZENER DIODES

90 90 75 92

M 482 41-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS

90 90 75 92

M 483 42-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES

98 98 100 97

M 484 42-02 DO YOU INSPECT POWER SUPPLIES

98 98 100 97

M 485 42-03 DO YOU CLEAN POWER SUPPLIES

96 96 100 95

M 486 42-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES

98 98 100 97

M 487 42-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL

96 96 100 95

M 488 42-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS

94 94 100 92

M 489 42-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES

94 94 100 92

M 490 42-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS

96 96 100 95

M 491 42-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS

85 85 63 90

M 492 42-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN

90 90 63 95

BRIDGE RECTIFIERS

M 493 42-11 DO YOU WORK WITH BRIDGE RECTIFIERS

92 92 88 92

M 494 42-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS

69 69 63 70

M 495 42-13 DO YOU USE OR REFER TO INPUT VOLTAGE

96 96 100 95

M 496 42-14 DO YOU USE OR REFER TO INPUT FREQUENCY

75 75 63 77

M 497 42-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE

85 85 63 90

M 498 42-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE

75 75 63 77

M 499 42-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE

83 83 75 85

M 500 42-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY

63 63 50 65

M 501 42-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE

54 54 38 57

M 502 42-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVES/FORMS

92 92 68 92

M 503 42-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE

95 95 75 98

M 504 42-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE

77 77 75 77

FILTERS

M 505 42-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE

60 60 50 63

FILTERS

M 506 42-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE

58 58 50 60

INPUT L-TYPE FILTERS

M 507 42-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE

52 52 25 57

INPUT L-TYPE FILTERS

M 508 42-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE

50 50 25 55

FILTERS

M 509 42-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE

54 54 50 55

FILTERS

M 510 42-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CONSTANT

21 21 13 22

MEMBER WHICH TYPE OF FILTER

M 511 42-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF

10 10 0 13

FILTER WITH A DIFFERENT TYPE FILTER

M 512 43-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB

73 73 75 72

SOLID-STATE
SPECIAL PURPOSE
DEVICES

POWER SUPPLIES

PCT MBS RESPONDING *YES* BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

SPC SPC SPC SPC
026 027 029 030

1 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS
1 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS
1 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD
1 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS
1 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS
1 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS
1 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS

1 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB

1 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS
1 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS
1 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS
1 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS
1 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS
1 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS
1 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS
1 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS
1 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT

LIMITERS AND
CLAMPERS

1 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES

1 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD
1 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES
1 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES
1 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES
1 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES
1 571 13-07 DO YOU USE OH METER TO CUTOFF
1 572 13-08 DO YOU USE OH REFER TO PEAK INVERSE VOLTAGE RATING
1 573 13-09 DO YOU USE OH REFER TO PEAK CURRENT RATING
1 574 13-10 DO YOU USE OH REFER TO TRANSIT TIME
1 575 13-11 DO YOU USE OH REFER TO PLATE DISSIPATION RATING
1 576 13-12 DO YOU USE OH REFER TO SATURATION
1 577 13-13 DO YOU USE OH REFER TO DC PLATE RESISTANCE
1 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES

ELECTRON TUBES

1 579 13-15 DO YOU USE OH REFER TO PLATE VOLTAGE
1 580 13-16 DO YOU USE OH REFER TO PLATE CURRENT
1 581 13-17 DO YOU USE OH REFER TO GRID VOLTAGE
1 582 13-18 DO YOU USE OH REFER TO GRID CURRENT
1 583 13-19 DO YOU USE OH REFER TO CATHODE VOLTAGE
1 584 13-20 DO YOU USE OH REFER TO CATHODE CURRENT
1 585 13-21 DO YOU USE OH REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)

PCT HRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC	SPC	SPC	SPC
		026	027	029	030
UT-TSK					
1 586	13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	13	13	0	15
1 587	13-23 DO YOU USE OR REFER TO MULTIMETER (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	44	44	25	47
1 588	13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (9, WHICH IS MEASURED IN MMOS)	19	19	0	22
1 589	13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	17	17	0	20
1 590	13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	23	23	0	27
1 591	13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	17	17	0	20
1 592	13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	29	29	13	32
1 593	13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	23	23	13	25
1 594	13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	17	17	13	17
1 595	13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	17	17	13	17
1 596	13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	19	19	13	20
1 597	13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	19	19	13	20
1 598	13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	54	54	25	60
1 599	13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	44	44	25	47
1 600	13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	60	60	38	65
1 601	13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	44	44	13	50
1 602	13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	65	65	25	72
1 603	13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	17	17	13	17
1 604	13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	15	15	0	17
1 605	13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	92	92	75	95
1 606	13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	96	96	100	95
1 607	13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	19	19	0	22
1 608	13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	77	77	75	77
J 609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	85	85	63	90
J 610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	52	52	39	55

ELECTRON TUBE
AMPLIFIERS
AND CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DI-TSK

	SPC 026	SPC 027	SPC 029	SPC 030
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PHASE AMPLIFIERS	42	42	25	45
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	56	56	25	63
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	35	35	13	40
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	35	35	25	38
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	44	44	25	47
J 616 J2-01 DO YOU WORK WITH GAS TUBES (NOT CATHODE OR COLO CATHODE)	60	60	13	70
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	90	90	75	92
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	21	21	13	24
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	23	23	13	25
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THERMIONS	17	17	13	17
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THERMIONS ARE USED	23	23	13	25
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	60	60	25	67
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	52	52	25	57
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	56	56	25	63
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHO- SCREENS	54	54	25	60
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	27	27	25	27
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	23	23	13	25
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	21	21	13	22
J 629 J2-14 DO YOU USE OR REFER TO DELAY TIMES	19	19	13	20
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	38	38	25	40
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	40	40	25	42
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	21	21	38	17
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	17	17	13	17
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	10	10	0	13
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	2	2	0	2
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	4	4	0	5
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	4	4	0	5
K 638 K1-01 DO YOU WORK ON A TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	10	10	38	5
K 639 K1-02 DO YOU INSPECT A TRANSMIT OR RECEIVE SYSTEMS	10	10	38	5
K 640 K1-03 DO YOU CLEAN A TRANSMIT OR RECEIVE SYSTEMS	10	10	38	5
K 641 K1-04 DO YOU ALIGN OR ADJUST A TRANSMIT OR RECEIVE SYSTEMS	10	10	38	5

SPECIAL PURPOSE
ELECTRON TUBES

HETERODYNING,
MODULATION, AND
DEMULATION

AM SYSTEMS

PCT MRS RESPONDING 'YES' BY SELECTED CMPS

GPSUM2 PAGE 24

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC SPC
026 027 027 030

K 642 K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS

K 643 K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE

COMPONENTS

K 644 K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE

SYSTEMS

K 645 K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE

COMPONENTS

K 646 K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS

K 647 K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS

K 648 K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS

K 649 K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS

K 650 K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS

K 651 K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS

K 652 K1-15 DO YOU PERFORM TASKS ON DETECTORS

K 653 K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE

K 654 K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN

TRANSMITTERS

K 655 K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN

TRANSMITTERS

K 656 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS

K 657 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS

K 658 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION

K 659 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION

K 660 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION

K 661 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE

K 662 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS

K 663 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR

IMAGE REJECTION RATIOS

K 664 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM

TRANSMITTER SCHEMATIC DIAGRAMS

K 665 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM

RECEIVER SCHEMATIC DIAGRAMS

K 666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN

YOUR PRESENT JOB

K 667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS

K 668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS

K 669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS

K 670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE

SYSTEMS

K 671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE

COMPONENTS

K 672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE

SYSTEMS

K 673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE

COMPONENTS

K 674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS

K 675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS

FM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		UY-TSK		SPC		SPC		SPC		SPC	
				046		027		029		030	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	4	4	0	0	5					
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	10	10	25	7						
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	6	6	0	7						
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	13	13	25	10						
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	4	4	0	5						
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	4	4	0	5						
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	4	4	0	5						
K 683	K2-18 DO YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	6	6	0	7						
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	6	6	0	7						
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	52	52	38	55						
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	73	73	88	70						
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	52	52	38	55						
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	50	50	38	52						
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	65	65	63	65						
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	52	52	38	55						
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	58	58	50	60						
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	50	50	25	55						
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	50	50	25	55						
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	48	48	25	52						
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	75	75	75	75						
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	52	52	25	57						
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	52	52	25	57						
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	52	52	25	57						
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	52	52	25	57						
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	58	58	25	65						
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	58	58	25	65						
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	56	56	25	63						
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	58	58	25	65						
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	73	73	75	72						
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	73	73	75	72						
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	73	73	75	72						

NUMBERING
SYSTEMS

LOGIC FUNCTIONS

PCT MEMS RESPONDING "YES" BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

	SPC	SPC	SPC	SPC
	026	027	029	030
L 707 L1-L3 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	73	73	75	72
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	44	44	38	45
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	33	33	13	38
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	27	27	13	30
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	35	35	13	40
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	50	50	38	52
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	35	35	13	40
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	35	35	13	40
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	33	33	13	38
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	27	27	13	30
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	52	52	25	57
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	42	42	13	47
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	46	46	13	52
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	56	56	38	60
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	56	56	38	60
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	56	56	38	60
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	52	52	13	60
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	52	52	13	60
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	52	52	13	60
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	44	44	13	50
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	42	42	13	47
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	42	42	13	47
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	52	52	38	55
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	44	44	25	47
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	44	44	25	47
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	40	40	13	45

BOOLEAN
EQUATIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

LY-75K

	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	60	60	50	50	63	COUNTERS
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	54	54	50	50	55	
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	54	54	50	50	55	
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	48	48	50	50	47	
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	52	52	50	50	52	
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	38	38	25	25	40	
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	48	48	50	50	47	
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	33	33	13	13	38	
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	54	54	50	50	55	
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	56	56	50	50	57	
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	42	42	38	38	42	
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	35	35	38	38	35	
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	42	42	38	38	42	
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	31	31	13	13	35	
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	44	44	38	38	45	
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	48	48	38	38	50	
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	42	42	38	38	42	
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	35	35	25	25	38	TIMING CIRCUITS
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	33	33	25	25	35	
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	40	40	25	25	42	
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	40	40	13	13	45	
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	38	38	25	25	40	
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	35	35	25	25	38	
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	40	40	25	25	42	
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	83	83	38	38	92	
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	54	54	13	13	63	
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	65	65	25	25	72	
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	56	56	25	25	63	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC
		026	027	029	030
M 794	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	4	4	13	2
M 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	17	17	25	15
M 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	13	13	13	13
M 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	67	67	50	70
M 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	46	46	38	47
M 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	31	31	13	35
M 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	48	48	38	50
M 801	M3-23 DO YOU INSPECT GENERATORS	25	25	38	22
M 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	19	19	38	15
M 803	M3-25 DO YOU OPERATE GENERATORS	23	23	38	20
M 804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	25	25	38	22
M 805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	23	23	38	20
M 806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	25	25	38	22
M 807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	21	21	38	17
M 808	M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	55	85	88	85
M 809	M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	33	33	0	40
M 810	M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	35	35	0	42
M 811	M1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	40	40	0	47
M 812	M1-05 DO YOU READ METER SCALES	90	90	88	90
M 813	M1-06 DO YOU EXTEND THE RANGE OF AMMETERS	44	44	25	47
M 814	M1-07 DO YOU ZERO OHMMETERS	90	90	88	90
M 815	M1-08 DO YOU ZERO AMPMETERS	48	48	50	47
M 816	M1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	60	60	25	67
M 817	M1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	73	73	75	72
M 818	M2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	6	6	0	7
M 819	M2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	6	0	7
M 820	M2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	4	0	5
M 821	M2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	2	2	0	2
M 822	M2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	0	6	0	7
M 823	M2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	0	6	0	7
M 824	M2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	0	6	0	7

METER MOVEMENTS

SATURABLE REACTORS
AND MAGNETIC
AMPLIFIERS

PCT MURS RESPONDING *YES* BY SELECTED GRPS

UPSUN2 PAGE 30

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

SFC SFC SFC SFC
026 027 028 030

N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF
SINGLE WINDING SATURABLE REACTORS
N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR
WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE
REACTORS
N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS FOR MAGNETIC AMPLIFIERS
N 829 N2-12 DO YOU USE OR REFER TO COERCITIVE FORCE IN SATURABLE
REACTORS
N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN
SATURABLE REACTORS
N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE
REACTORS
N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN
SATURABLE REACTORS
N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC

SIMBOLS

N 834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT
JOB
N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS
N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)
N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
N 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY
(PRF)
N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS
N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME
CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT
N 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS
DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT
AND OUTPUT CONFIGURATION
N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS
N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS
N 845 O1-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR
PRESENT JOB
N 846 O1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS
N 847 O1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS
N 848 O1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS
N 849 O1-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
SYSTEMS
N 850 O1-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
COMPONENTS
N 851 O1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
SYSTEMS
N 852 O1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
COMPONENTS

WAVESHAPING
CIRCUITS

SINGLE SIDEBAND
SYSTEMS

PCT MBMS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC
026 027 028 029

LT-TSK

0 653 01-09 00 YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	0	0	0	0
0 654 01-10 00 YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0	0	0
0 655 01-11 00 YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0	0	0
0 656 01-12 00 YOU PERFORM TASKS ON SSB LC FILTERS	0	0	0	0	0
0 657 01-13 00 YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0	0	0
0 658 01-14 00 YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0	0	0
0 659 01-15 00 YOU PERFORM TASKS ON SSB OSCILLATORS	0	0	0	0	0
0 660 01-16 00 YOU PERFORM TASKS ON SSB MIXERS	0	0	0	0	0
0 661 01-17 00 YOU PERFORM TASKS ON SSB DRIVERS	0	0	0	0	0
0 662 01-18 00 YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	2	2	0	0	2
0 663 01-19 00 YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	0	0	0	0
0 664 01-20 00 YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0	0	0
0 665 01-21 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0	0	0
0 666 01-22 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0	0	0
0 667 01-23 00 YOU PERFORM TASKS ON SSB DEMODULATORS	0	0	0	0	0
0 668 01-24 00 YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB	0	0	0	0	0
SYSTEM STAGES					
0 669 01-24 00 YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0
0 670 01-25 00 YOU USE OR REFER TO PEAK POWER	0	0	0	0	0
0 671 01-26 00 YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0	0	0
0 672 01-27 00 YOU USE OR REFER TO RESPONSE CURVES FOR	0	0	0	0	0
BANDWIDTH FILTERS					
0 673 01-28 00 YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB	0	0	0	0	0
TRANSMITTERS					
0 674 01-29 00 YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SSB	0	0	0	0	0
TRANSMITTER SCHEMATIC DIAGRAMS					
0 675 01-30 00 YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SSB	0	0	0	0	0
RECEIVER SCHEMATIC DIAGRAMS					
0 676 01-31 00 YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR	35	35	0	0	42
PRESENT JOB					
0 677 02-01 00 YOU INSPECT PULSE MODULATION SYSTEMS	33	33	0	0	40
0 678 02-02 00 YOU CLEAN PULSE MODULATION SYSTEMS	29	29	0	0	35
0 679 02-03 00 YOU ALIGN PULSE MODULATION SYSTEMS	35	35	0	0	42
0 680 02-04 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	35	35	0	0	42
0 681 02-05 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM	35	35	0	0	42
COMPONENTS					
0 682 02-06 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	33	33	0	0	40
0 683 02-07 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM	33	33	0	0	40
COMPONENTS					
0 684 02-08 00 YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)	29	29	0	0	35
SYSTEMS					
0 685 02-09 00 YOU WORK ON PULSE-DURATION MODULATION (PDM)	27	27	0	0	32
SYSTEMS					
0 686 02-10 00 YOU WORK ON PULSE-POSITION MODULATION (PPM)	27	27	0	0	32
SYSTEMS					
0 687 02-11 00 YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	21	21	0	0	45
0 688 02-12 00 YOU WORK ON LIVE PULSING MODULATION SYSTEMS	21	21	0	0	25
0 689 02-13 00 YOU WORK ON DON'T REMEMBER WHICH TYPE OF	8	8	0	0	10
MODULATION SYSTEM					

PULSE MODULATION
SYSTEMS

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 026	SPC 027	SPC 029	SPC 030
0 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	33	33	0	40
0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	21	21	0	25
0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	33	33	0	40
0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	29	29	0	35
0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATONS	15	15	0	17
0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	23	23	0	27
0 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	15	15	0	17
0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	23	23	0	27
0 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	25	25	0	30
0 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	21	21	0	25
0 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	25	25	0	30
0 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	27	27	0	32
0 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	21	21	0	25
0 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	10	10	0	13
0 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	31	31	0	38
0 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	29	29	0	35
0 905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	31	31	0	38
0 906 02-32 DO YOU USE OR REFER TO PULSE SHAPE	31	31	0	38
0 907 02-33 DO YOU USE OR REFER TO PEAK POWER	27	27	0	32
0 908 02-34 DO YOU USE OR REFER TO AVERAGE POWER	25	25	0	30
0 909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	21	21	0	25
0 910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	27	27	0	32
0 911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	17	17	0	20
0 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	25	25	0	30
0 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	21	21	0	25
0 914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	2	2	0	2
0 915 03-02 DO YOU INSPECT ANTENNAS	2	2	0	2

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

UY-TSK	SPC 026	SPC 027	SPC 027	SPC 030
0 916 03-05 DO YOU CLEAN ANTENNAS	2	2	0	2
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	2	2	0	2
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	2	2	0	2
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	2	2	0	2
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	2	2	0	2
0 921 03-06 DO YOU REMOVE OR INSTALL ANTENNAS	2	2	0	2
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	2	2	0	2
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0	0
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	0	0
0 925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0
0 926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0
0 927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0
0 928 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR	0	0	0	0
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	2	2	0	2
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0	0
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	2	2	0	2
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	2	2	0	2
0 933 03-20 DO YOU WORK WITH CARDIOID ARRAYS	2	2	0	2
0 934 03-21 DO YOU WORK WITH COLLIMAR ARRAYS	2	2	0	2
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	0	0
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0	0
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	0	0
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0	0
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

SPC SPC SPC SPC
026 027 028 029 030

0 445 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS
0 446 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS SERVING AS DIRECTORS
0 447 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS SERVING AS REFLECTORS
0 448 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN CON'T
REMEMBER WHAT KIND OF ELEMENTS
0 449 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
0 450 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
0 451 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
0 452 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS
0 453 03-40 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION
LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS
BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL
AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER
WAVELENGTHS AS TRANSMISSION LINES
0 454 03-41 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN
TRANSMISSION LINES
0 455 03-42 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY
CURRENTS IN TRANSMISSION LINES
0 456 03-43 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION
LINES
0 457 03-44 DO YOU USE OR REFER TO DIELECTRIC LOSS IN
TRANSMISSION LINES
0 458 03-45 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION
LINES
0 459 03-46 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES
0 460 03-47 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES
0 461 03-48 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES
0 462 03-49 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION
LINES
0 463 03-50 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION
LINES
0 464 03-51 DO YOU TROUBLESHOOT TRANSMISSION LINES
0 465 03-52 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN
TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION
(OPEN, SHORTED, CAPACITIVE, INDUCTIVE)
0 466 03-53 DO YOU SELECT APPROPRIATE TRANSMISSION LINES
TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS
0 467 03-54 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE
TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS
0 468 03-55 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF
TRANSMISSION LINES
0 469 03-56 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF
TRANSMISSION LINES
0 470 03-57 DO YOU PERFORM THE CALCULATIONS NECESSARY TO
DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH
MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS

TRANSMISSION
LINES

SPC SPC SPC SPC
026 027 028 029 030

0 445 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS
0 446 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS SERVING AS DIRECTORS
0 447 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC
ELEMENTS SERVING AS REFLECTORS
0 448 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN CON'T
REMEMBER WHAT KIND OF ELEMENTS
0 449 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
0 450 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
0 451 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
0 452 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS
0 453 03-40 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION
LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS
BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL
AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER
WAVELENGTHS AS TRANSMISSION LINES
0 454 03-41 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN
TRANSMISSION LINES
0 455 03-42 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY
CURRENTS IN TRANSMISSION LINES
0 456 03-43 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION
LINES
0 457 03-44 DO YOU USE OR REFER TO DIELECTRIC LOSS IN
TRANSMISSION LINES
0 458 03-45 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION
LINES
0 459 03-46 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES
0 460 03-47 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES
0 461 03-48 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES
0 462 03-49 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION
LINES
0 463 03-50 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION
LINES
0 464 03-51 DO YOU TROUBLESHOOT TRANSMISSION LINES
0 465 03-52 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN
TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION
(OPEN, SHORTED, CAPACITIVE, INDUCTIVE)
0 466 03-53 DO YOU SELECT APPROPRIATE TRANSMISSION LINES
TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS
0 467 03-54 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE
TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS
0 468 03-55 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF
TRANSMISSION LINES
0 469 03-56 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF
TRANSMISSION LINES
0 470 03-57 DO YOU PERFORM THE CALCULATIONS NECESSARY TO
DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH
MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

	SPC 026	SPC 027	SPC 029	SPC 030
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	2	2	0	2
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	0	0	0	0
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0	0
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	0	0	0	0
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0
P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	2	2	0	2
P 981 P1-29 DO YOU WORK WITH NONRESONANT (ELAT) TRANSMISSION LINES	2	2	0	2
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	2	2	0	2
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STAR MATCHING	2	2	13	0
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	0	0	0
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	0	0	0
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	0	0	0
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	0	0	0
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	0	0	0	0
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0	0
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	0	0	0
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKES JOINTS	0	0	0	0
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0	0
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	0	0	0
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	0	0	0
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0	0

WAVEGUIDES AND
CAVITY RESONATORS

PCT MEMS RESPONDING YES BY SELECTED GPPS

TASK GROUP SUMMARY
PLCYENT MEMBERS PERFORMING

LY-TSK

SPC SPC SPC SPC
026 027 029 030

P1003 P2-21 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES
P1004 P2-41 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P1021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P1022 P2-39 ARE COILS REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 026	SPC 027	SPC 029	SPC 030
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	2	2	0	2
P1065 P3-32 DO YOU CLEAN MAGNETRONS	2	2	0	2
P1066 P3-33 DO YOU ADJUST MAGNETRONS	2	2	0	2
P1067 P3-34 DO YOU TUNE MAGNETRONS	2	2	0	2
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	2	2	0	2
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	2	2	0	2
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	2	2	0	2
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	2	2	0	2
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS COLLECTOR PLATES	0	0	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS CATCHER CAVITIES	0	0	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS CATCHER GRIDS	0	0	0	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS FEEDBACK LOOPS	0	0	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS DRIFT SPACES	0	0	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS BUNCHER GRIDS	0	0	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS BUNCHER CAVITIES	0	0	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS CONTROL GRIDS	0	0	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY ALYSTONS CATHODES	0	0	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	0	0	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0

PCT MEMS RESPONDING *YES* BY SELECTED GRPS

WPSURZ PAGE 39

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		UY-TSK							
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		026	027	029	030	026	027	029	030
P1088	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	0	0	0	0	0	0	0	0
P1089	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	0	0	0	0	0	0	0	0
P1090	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	0	0	0	0	0	0	0	0
P1091	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	0	0	0	0	0	0	0	0
P1092	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	0	0	0	0	0	0	0	0
P1093	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	0	0	0	0	0	0	0	0
P1094	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	0	0	0	0	0	0	0	0
P1095	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	0	0	0	0	0	0	0	0
P1096	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	0	0	0	0	0	0	0	0
P1097	P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	0	0	0
P1098	P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	0	0	0
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	0	0	0	0
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0	0	0	0	0
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	0	0	0	0
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	0	0	0
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	0	0	0	0
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0	0	0	0	0
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	0	0	0	0	0	0	0
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	0	0	0	0
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0	0	0	0	0
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	0	0	0	0	0	0	0	0
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0	0	0	0	0
G1110	G1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	63	63	50	65	63	63	50	65
G1111	G1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	60	60	38	65	60	60	38	65
G1112	G1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	60	60	38	65	60	60	38	65
J1113	J1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	63	63	50	65	63	63	50	65
J1114	J1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	52	52	25	57	52	52	25	57
J1115	J1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	54	54	34	63	54	54	34	63

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

4110 41-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A
SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES
HAVE PASSED

	SPC	SPC	SPC	SPC					
	026	027	029	030					
4110 41-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	44	44	13	50					
4117 42-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	63	63	50	65					
4118 42-02 DO YOU USE OR REFER TO DELAY LINES	27	27	13	30					
4119 42-03 DO YOU USE OR REFER TO MAGNETIC CORES	52	52	38	55					
4120 42-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	21	21	0	25					
4121 42-05 DO YOU USE OR REFER TO MAGNETIC TAPES	38	38	0	45					
4122 42-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED ON MEMORY SYSTEMS	56	56	38	60					
4123 42-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	52	52	50	52					
4124 42-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	29	29	13	32					
4125 42-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	27	27	25	27					
4126 43-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO- ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL HEADOUT CONVERTERS	73	73	75	72					
4127 43-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	35	35	13	40					DIGITAL TO ANALOG CONVERTERS
4128 43-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS	29	29	13	32					
4129 43-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	46	46	38	47					
4130 43-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	23	23	0	27					
4131 43-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	21	21	0	25					
4132 43-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	23	23	0	27					
4133 43-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	25	25	0	30					
4134 43-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	29	29	13	32					
4135 43-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	31	31	13	35					
4136 43-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	27	27	0	32					
4137 43-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	29	29	0	35					
4138 43-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	40	40	13	45					
4139 43-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO- DIGITAL (A/D) CONVERTERS	33	33	13	38					

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

SPC	SPC	SPC	SPC	SPC
024	027	049	030	

PHANTASTRONS

11110	11-01	DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	52	52	36	55	
11111	12-01	IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	48	48	25	52	SCHMITT TRIGGERS
11112	12-02	DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	40	40	25	42	
11113	12-03	DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	60	60	50	63	CABLE FABRICATION
11114	13-01	IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	63	63	38	67	
11115	13-02	DO YOU FABRICATE COAXIAL CABLES	67	67	75	65	
11116	13-01	IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	29	29	13	34	INPUT/OUTPUT DEVICES
11117	13-02	DO YOU PERFORM ANY TASKS ON MIXIE LIGHTS OR MIXIE LIGHT DECODER SYSTEMS	19	19	0	22	
11118	13-03	DO YOU ANALYZE MIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	46	46	0	55	PHOTO SENSITIVE DEVICES
11119	13-01	DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	31	31	13	35	
11120	13-01	IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	21	21	0	25	
11121	13-02	DO YOU MEASURE EXCITATION FREQUENCIES	19	19	0	22	
11122	13-03	DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	19	19	0	24	
11123	13-04	DO YOU USE OR REFER TO EXCITATION FREQUENCIES	17	17	0	20	
11124	13-05	DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	23	23	0	27	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
11125	13-06	DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	23	23	0	27	
11126	13-07	DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	23	23	0	27	
11127	13-08	DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	23	23	0	27	
11128	13-09	DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	25	25	0	30	
11129	11-01	DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	0	0	
11130	11-02	DO YOU INSPECT INFRARED SYSTEMS	0	0	0	0	
11131	11-03	DO YOU CLEAN INFRARED SYSTEMS	0	0	0	0	
11132	11-04	DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0	INFRARED
11133	11-05	DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0	
11134	11-06	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0	
11135	11-07	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	
11136	11-08	DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	
11137	11-09	DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	
11138	11-10	DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	

PCT MBNS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-13K

T1169 T1-11 DO YOU USE OR REFER TO FAR REGION
T1170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION
T1171 T1-13 DO YOU USE OR REFER TO NEAR REGION
T1172 T1-14 DO YOU USE OR REFER TO MICRON
T1173 T1-15 DO YOU USE OR REFER TO GRAY BOODIES
T1174 T1-16 DO YOU USE OR REFER TO BLACK BOODIES
T1175 T1-17 DO YOU USE OR REFER TO ABSORPTION
T1176 T1-18 DO YOU USE OR REFER TO SCATTERING
T1177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO
T1178 T1-20 DO YOU PERFORM TASKS ON BLITZ
T1179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS
T1180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES
T1181 T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES
T1182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES
T1183 T1-25 DO YOU PERFORM TASKS ON FILTERS
T1184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS
T1185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS
T1186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH

LASERS

T1187 T2-02 DO YOU INSPECT LASER SYSTEMS
T1188 T2-03 DO YOU CLEAN LASER SYSTEMS
T1189 T2-04 DO YOU OPERATE LASER SYSTEMS
T1190 T2-05 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF
T1191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF
T1192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER
T1193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER
T1194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER
T1195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER

SYSTEMS

T1196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)
T1197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS
T1198 T2-13 DO YOU USE OR REFER TO GROUND STATE
T1199 T2-14 DO YOU USE OR REFER TO EXCITED STATE
T1200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION
T1201 T2-16 DO YOU USE OR REFER TO PHOTONS
T1202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION
T1203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION
T1204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE
T1205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL
T1206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC
T1207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS
T1208 T2-23 DO YOU WORK WITH PUMPING SOURCES
T1209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS

SPC SPC SPC SPC
026 027 029 030

LASERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC SPC
026 027 029 030

DY-TSK

T1210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE)

MIRRONS

T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES

T1212 T2-27 DO YOU WORK WITH RUBY

T1213 T2-28 DO YOU WORK WITH HELIUM-NEON

T1214 T2-29 DO YOU WORK WITH HELIUM-AEON

T1215 T2-30 DO YOU WORK WITH XENON

T1216 T2-31 DO YOU WORK WITH CESIUM-HELIUM

T1217 T2-32 DO YOU WORK WITH ARGON

T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS

T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE

T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES,

SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE

STORAGE TUBES (AMST)

T1221 T3-02 DO YOU INSPECT DVST OR MMST

T1222 T3-03 DO YOU CLEAN DVST OR MMST

T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST

T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST

T1225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST

CIRCUITS

T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM

MAJOR ASSEMBLIES OR UNITS

T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME

THE VARIOUS ELEMENTS OF DVST

T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME

THE VARIOUS ELEMENTS OF MMST

T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS

T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS

T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS

T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS

T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

T1234 U1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY PROGRAMMING

TASKS

U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS

U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS

U1237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS

U1238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS

U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS

U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS

U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING

U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS

U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS

U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS

U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION

U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS

U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING

U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING

DISPLAY TUBES

PROGRAMMING

PCT MBRS RESPONDING *YES* BY SELECTED GHPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

LY-TSK		SPC	SPC	SPC	SPC
		026	027	029	030
U1249	U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	56	56	50	57
U1250	U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	44	44	50	42
U1251	U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	33	33	25	35
U1252	U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	46	46	50	45
U1253	U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	54	54	50	55
U1254	U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	67	67	75	65
U1255	U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	27	27	0	32
U1256	U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	15	15	0	17
U1257	U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	15	15	0	17
U1258	U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	0	0	0	0

DB AND POWER
RATIOS

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AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
DEFENSIVE SYSTEMS TRAINER SPECIALIST, AFSC 34152.(U)
AUG 77 T J O'CONNOR, J X OLIVO

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NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

SUPPLEMENTARY

INFORMATION

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Defensive Systems Trainer Specialists (AFSC 34152). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.		

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→ This specialty has the following functions:

Installs, maintains, repairs, inspects, operates, and modifies defensive system trainers; and maintains associated test equipment. Performs preventive maintenance on defensive system trainers. Installs, repairs, adjusts and modifies defensive system trainers. Operates defensive system trainers. Supervises defensive system trainer personnel.

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